Job Title: Diagnostics Services Engineer IO0999

Requisition ID **4320** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Engineering of Systems** - **New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full-time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as a reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure, and cultural opportunity.

To see why ITER is a great place to work, please look at this video

Application deadline: 29/08/2021
Domain: Engineering
Department: Engineering Design
Division: Port Plugs & Diagnostics
Section: In-Vessel Diagnostics
Job Family: Project Engineering
Job Role: Engineer - 1
Job Grade: P2
Language requirements: Fluent in English (written & spoken)
Contract duration: Up to 5 years

Purpose

As the Diagnostics Services Engineer, you will lead the design and interface updates of electrical services and instrumentation sub-systems integrated within the tokamak.
You will develop, organize and oversee the procurement and the acceptance of electrical services and instrumentation sub-systems.
Finally you will prepare and support the installation of electrical services and instrumentation sub-systems integrated within the tokamak

Background

The aim of diagnostics is to provide the measurements necessary to control the plasma and first wall processes in operation to achieve the ITER goals and to gain the knowledge needed for future reactor design. The Port Plugs and Diagnostic Integration Division provides all the Diagnostics for ITER, along with the engineering infrastructures and test systems to support these and guides them through design, manufacturing, installation and commissioning, always keeping efficient operation in view.
The In-Vessel Diagnostics Section (IVD) prepares 35 diagnostic projects to support the ITER Operation. Many of these involve sensor and hardware groups critical to machine operation and distributed on the surfaces of core machine components such as the main vacuum vessel and divertor cassettes. Distributed services provide signal and power connections to these sensors, and must provide high levels of reliability despite operating in an extremely challenging environment. The electrical services are in the final design, manufacturing and assembly stages, and success needs careful and high quality follow-up of design, qualification, manufacturing, acceptance testing, pre-assembly preparation and final assembly.

Major Duties/Roles & Responsibilities

- Updates and assesses designs for components and sensors located on the Vacuum Vessel, Divertor Cassettes and Cryostat, and takes, at different steps of the project, through gate reviews, all relevant supporting engineering documents;
- Identifies, updates and maintains all relevant interfaces including all client systems;
- Supports the design review processes for electrical services sub-systems integrated within the tokamak;
- Prepares and reviews technical specifications and 2D drawings for procurement;
- Monitors compliance of electro-mechanical components from different sources with all technical requirements;
- Monitors manufacturing contracts including witness visits and factory acceptance tests to approve deliverables;
- Plans and specifies detailed assembly, integration and testing activities on site, interacting with interfacing teams as required;
- Reports variances on technical, cost and schedule aspects and proposes recovery plan where relevant;
- Monitors change requests and deviation requests, implementing and following-up on recovery plans as necessary;
- Supports effective risk identification and management;
- Maintains related documentation at all times on the ITER Document System and ensures it is updated and in the correct formats;
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.

Note: May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization

Measure of Effectiveness

- Completes work packages to agreed deadlines;
- Manages interfaces efficiently and smoothly;
- Developed and approved technical documentation for procurement;
- Developed and approved installation plans;
- Efficient management and reporting of the schedule performance index;
- Successful collaboration with technical partners in Domestic Agencies and other Departments/Offices at ITER Organization (IO);
- Efficient work at all times with other Diagnostics team members.

Experience & Profile

- ***Professional Experience:***
  - At least 5 years' experience in the role/job function of Electro-Mechanical Engineering within the field of robotics, underwater assembly, mechatronics, remote manipulation or remote sensing, etc.
- ***Education:***
  - Master's degree or equivalent in an Engineering field or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- ***Language requirements:***

- Fluent in English (written and spoken).

- ***Technical Competencies and demonstrated experience in:***
  - Most aspects of electro-mechanical engineering design and implementation, such as noise, EMC, RF transmission, connector design, mechanical integrity, spatial interactions, metrology;
  - Engineering and interface designs for complex, one-of-a-kind electro-mechanical or electro-optical sub-systems or components (at least two projects followed from concept to implementation);
  - Preparing technical specifications and drawings, and engaging in procurement activities;
  - Nuclear projects (such as Diagnostic Engineering, System Design, Remote Handling, materials specification, ALARA principles, etc.) is highly desired
  - Engineering codes and standards, and manufacturing or database manipulation;
  - Installation in a complex environment (e.g. satellites, submarines, particle accelerator detectors)
  - Technical follow-up of Computer Aided Design (CAD) activity and/or direct participation in CAD activities would be an advantage (i.e. Ability to use analysis codes (ANSYS etc) and CAD tools (CATIA etc)).
- ***Behavioral Competencies:***
  - Collaborate: Ability to dialogue with a wide variety of contributors and stakeholders;
  - Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
  - Drive results: Ability to persist in the face of challenges to meet deadlines with high standards; Manage Complexity: Ability to gather multiple and diverse sources of information to understand problems accurately before moving to proposals/solutions;
  - Manage Complexity: Ability to analyze multiple and diverse sources of information to understand/define problems accurately before moving to proposals;
  - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

The following important information shall apply to all jobs at ITER Organization:

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;
- ITER Core technical competencies of 1) Nuclear Safety, environment, radioprotection and pressured equipment 2) Occupational Health, safety & security 3) Quality assurance processes. Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by line management and that may jeopardize the achievement of the Project's objectives.